

## ROOM TEMPERATURE-CURABLE ELASTIC COMPOSITION

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**Applicant(s):** SUNSTAR ENGINEERING INC

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- European:

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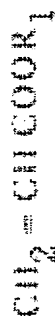
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**Abstract of JP 59078220 (A)**

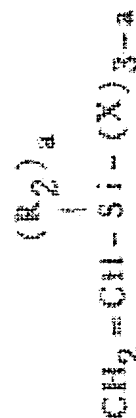
**PURPOSE:** The titled moisture-curable resin composition excellent in weather resistance, heat resistance, and durability, comprising an acrylate ester monomer, a vinylalkoxysilane, and a mercapto group-containing chain transfer agent.

**CONSTITUTION:** A moisture-curable copolymer composition (room temperature-curable elastic composition preferably of a MW of 3,000-10X10<sup>4</sup>) is obtained by copolymerizing (A) an acrylate ester monomer of formula I (wherein R<sup>1</sup> is a 2-8C alkyl), e.g., ethyl acrylate, with (B) a vinylalkoxysilane of formula II (wherein R<sup>2</sup> is a 1-4C alkyl, X is methoxy, or ethoxy, and a is 0, 1 or 2), e.g., vinyltriethoxysilane, in the presence of (C) about 0.001-0.05mol, per mol of component A, of a mercapto group-containing chain transfer agent (e.g., n-butyl mercaptan), (preferably component B being used in an amount about 2-6 molar times that of component C).

I



II



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10 (71) Applicant: Sunstar Engineering Inc.

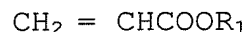
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## 2. CLAIMS

(1) A room-temperature curable elastic composition  
15 which comprises, as a main component, a polymer formed  
by:

(a) one or more kinds of acrylate ester monomers  
represented by the formula:

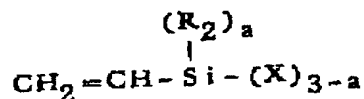


20 (wherein R<sub>1</sub> is an alkyl group having 2 to 8 carbon  
atoms);

(b) one or more kinds of vinyl alkoxysilanes  
represented by the formula:

[Chem. 1]

25



(wherein R<sub>2</sub> is an alkyl group having 1 to 4 carbon  
atoms, X is a methoxy group or ethoxy group, and a is 0, 1,  
30 or 2]; and

(c) a chain transfer agent containing a mercapto  
group.

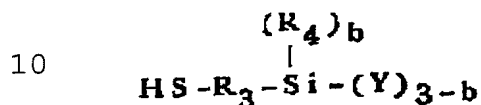
(2) The composition according to claim (1),  
35 which uses 0.001 to 0.05 mol of the chain transfer

agent (c) containing a mercapto group per mol of the acrylate ester monomers (a).

(3) The composition according to claim (2),

which uses, as the chain transfer agent (c) containing a mercapto group, one or more kinds of mercapto alkoxysilanes represented by the formula:

[Chem. 2]



(wherein  $R_3$  is a bivalent hydrocarbon group,  $R_4$  is an alkyl group having 1 to 4 carbon atoms,  $Y$  is a methoxy group or ethoxy group, and  $b$  is 0, 1, or 2].

(4) The composition according to claim (2),

which, in the case of using one or more kinds of said mercapto alkoxysilanes as the chain transfer agent (c) containing a mercapto group, uses 1.5 to 5.0 mol of said vinyl alkoxysilanes as the (b) component per mol of the chain transfer agent (c).

(5) The composition according to claim (2),

which, in the case of using a substance other than said mercapto alkoxysilanes as the chain transfer agent (c) containing a mercapto group, uses 2.0 to 6.0 mol of said vinyl alkoxysilanes as the (b) component per mol of the chain transfer agent (c).

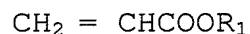
(6) The composition according to any one of claims (1) to (5),

which, in addition to the acrylate ester monomers (a), uses 20 to 50 mol% or less of a polymerizable monomer capable of being copolymerized with the acrylate ester monomers.

page 2, upper right column, line 11 to page 2, lower left column, line 6

That is, the present invention provides a room-  
 5 temperature curable elastic composition which comprises, as a main component, a polymer formed by:

(a) one or more kinds of acrylate ester monomers represented by the formula:

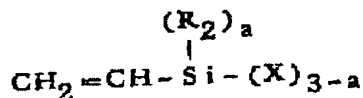


10 (wherein  $R_1$  is an alkyl group having 2 to 8 carbon atoms);

(b) one or more kinds of vinyl alkoxysilanes represented by the formula:

[Chem. 1]

15



(wherein  $R_2$  is an alkyl group having 1 to 4 carbon atoms, X is a methoxy group or ethoxy group, and a is 0, 1,  
 20 or 2); and

(c) a chain transfer agent containing a mercapto group, and

the composition has excellent light resistance, weather resistance, heat resistance and decay resistance,  
 25 and is extremely useful as an elastomeric sealant.